CENTRAL REGIONAL LABORATORY

Data Checklist

	Data Set AIR 2009 0008 Cheshire Monitoring
	Suspend Particles
	Chain-of-Custody
0	Analysis Request Form(s)*
	Sample Tags
9	Transmittal Report w/signatures of the following:
	• Analyst (s)

* Analysis Request Forms provide the data user a means to connect sample numbers with sampling locations

Data Management Coordinator

Prepared by: Data Management Coordinator

Rev. 5/4/00

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date:

OCT 2 9 2001

Subject:

Review of Region 5 Data for **CHESHIRE MONITORING STUDY**

From:

Francis A. Awanya, Chemist FAA

Region 5 Central Regional Laboratory

To:

Attached are the results for: <u>CHESHIRE MONITORING STUDY</u>

CRL data set number: 20020008

Samples analyzed for: Suspended Particles

Results are reported for sample designations: 2002AH14S01, 2002AH14D01, 2002AH14S02,

and 2002AH14S03.

Data	Management	Coordinator	and Date	Received
		C C C C C C C C C C C C C C C C C C C		110001100

Date Transmitted: CT 2 9 2001

Please have the U.S. EPA Project Manager/Officer complete the Customer Satisfaction Survey, attached, or call the CRL Sample Coordinator at 3-1226.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

Received by and Date

Comments:

ENVIRONMENTAL PROTECTION AGENCY REGION V CENTRAL REGIONAL LABORATORY FINAL RESULT REPORT FOR THE TEAM: ANALYTICAL AND INORGANIC (A&I)

DIVISION/BRANCH: AIR DIVISION SAMPLING DATE: 10/10/2001 LAB ARRIVAL DATE: 10/19/2001 DUE DATE: 10/26/2001

DU NUMBER: 90101A DATA SET NUMBER: 20020008 STUDY: CHESHIRE MONITORING STUDY PRIORITY: 1 LABORATORY: CRL

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	SUSPENDED PARTICLE (g/filter)		, Victoria
1	2002AH14D01	GUIDING HANDS SCHOOL	0.0255		
2	2002AH14S01	GUIDING HANDS SCHOOL	0.0261		
3	2002AH14S02	RVHS	0.0176		
4	2002AH14S03	ADDAVILLE	0.0210		
DATE OF	F ANALYSIS		10/23-26/2001		
ANA	ALYST	, — — — — — — — — — — — — — — — — — — —	FAR		

Reviewed by:	6.8	_ Date:_{\bigcirc}	10001,0001
C-0.150/6007 a	a contract of the second of th	175	

CRL SOP: HK015	Date: 07 January 2000	Revision No: 1
Data review for the Analytical and	Inorganic Group	Page 1 of 1

ATTACHMENT II
CRL Analytical and Inorganics Data Review Checklist

CRL Analytical and Inorganics Data Review Checklist Batch Number: 2002000 8 Facility: CHESHIRE MONIT Parameter: SUSPENDED SOLIDS CRL.SOP: A16047	TORING STO	upy	
Package Overview:	YES	NO	
Raw Data Package Complete?	V		
Results Reported Correctly?	V		
Special Requests Done?	N/A		
Calculations Checked?			
Calibration Not Exceeded?	N/A		
Manual Peak Integration performed? Circle one IC or GC and Check	N/A		
Field QC Checked?	N/A		
Quality Control:			
Holding Times Met?	N/A		
Preservation Checked?	N/A		
Proper Digestion Verified?	N/A		
Initial Instrument Performance Checks Verified?	V		
Calibration Verification Checked?	N/A		
Sample-Specific QC (Internal Standards or Analytical Spikes) Okay?	NA		
Matrix QC Checked?	N/A		
Digestion Blanks Checked?	N/A	*.	
Spiked Blank Checked?	N/A		
LCS (if applicable) Checked?	N/A	*	
QCS (if applicable) Checked?			
Final Check			
Technical Review Done?	V		
Narrative Complete?	V		
nalyst: Peer Reviewer:			
Date: $10/36/2001$ Date: $10/36/2001$			
Comments Attached? (Y/N)	CRL Fo	orm Version 0	

Data Set Number:	20020008	_ Parameter:	Suspended Particles			
Facility Name:	CHESHIRE MONITORING STUDY					
Study Name:	CHESHIRE MONITO	RING STUDY				
Date of Narrative:	10/26/2001	Analyst:	<u>FAA</u>			
		Signature:	FAA			

ANALYSIS CASE NARRATIVE

Four (4) exposed filters were received for suspended particle analysis at the Central Regional Laboratory (CRL) on October 19, 2001. Those filters were fractions of clean filters, prepared at the CRL and sent to the field for exposure. Filter identification numbers and other pertinent information obtained from the individual filters and packaging envelopes are presented in the table below.

Filters ID	Samples ID	Tag Number
Q6280054	2002AH14D01	5-340079-2
Q6280053	2002AH14S01	5-340078-2
Q6280055	2002AH14S02	5-340080-2
Q6280056	2002AH14S03	5-340081-2

Filter preparations and final weighting of exposed filters were performed according to CRL.SOP AIG047. Analysis of exposed filters began on 10/23/2001 and were completed on 10/26/2001.

QUALITY CONTROL (QC):

Analysis results were evaluated using the QC requirements of CRL.SOP AIG047. All the required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits.

SAMPLE RESULTS: All the sample results are acceptable for use.

ELECTRONIC DATA:

No electronic data are available.

CHESHIRE AIR MONITORING PROJECT PM10

Parameter: Suspended Particles

Data Set Numbers: 20020008

Date of Analysis 10/23-26/2001

Analyst:

FAA

BALANCE VERIFICATION:

	10111	
Sandard Weights	Balanced weight	Differences
Actual (g)	Balanced (g)	(g)
		Limit +/-0.0005 g
Data set Number 2002	20008	
1.0000	1.0000	0.0000
2.0000	2.0000	0.0000
5.0000	5.0000	0.0000

QC-SUMMARY FOR EXPOSED FILTERS

Filter ID	CRL Sample	Analysis	ANALYST	Exposed
Number	I.D Number	Date		weight (g)
Data set Number 20	020008			
Q6280054	2002AH14D01	10/26/01	Analyst 1	4.3919
Q6280054	2002AH14D01	10/26/01	Analyst 2	4.3914
Differences (Limit +/-	5 mg)			0.0005

CHESHIRE AIR MONITORING PROJECT PM10

Filter ID	CRL Sample	Sampling	Station	Sampler	Pstg	P1/Pa	Total	Pre Weight	Exposed	Weight	PM10
Number	I.D Number	Date	Location	SN	Avg		Volume (M^3)	of filters (g)	weight (g)	Gain	(UG/M^3)
								75.00			
	-				****	1					
	umber 20020008						1				
Q6280054	2002AH14D01	10/10/01	Guiding Hands School	3013	20.15		0.00	4.3664	4.3919	0.0255	ERR
	2002ÄH14S01	10/10/01	Guiding Hands School	3012	19.55		0.00	4.3510	4.3771	0.0261	ERR
G6280055	2002AH14S02	10/10/01	RVHS	3009	19.90		0.00	4.3613	4.3789	0.0176	ERR
Q6280056	2002AH14S03	10/10/01	ADDAVILLE	3011	19.15]	0.00	4.3396	4.3606	0.0210	ERR

General	information
---------	-------------

Standard weights, actual (g)

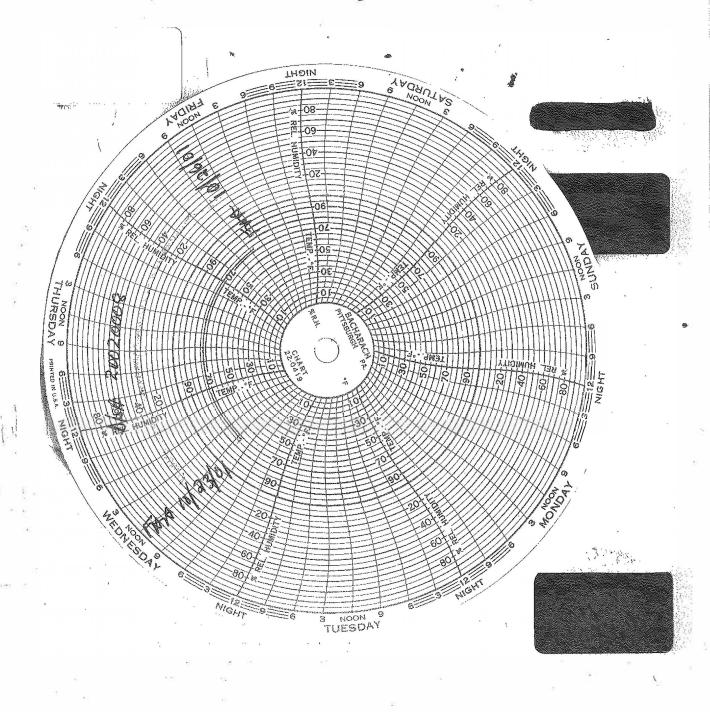
Balanced weights, balanced (g)

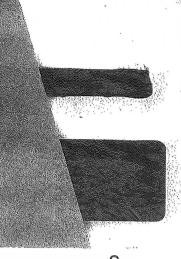
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Sampler Mike Mungol 10-10-02 Date

Sample ID 02AH14D01

Parameters PM10 Preservative None

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POMOTING ALC

TEMP

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B SAMPLE WI

mg/m³

Sample ID 02AH14S01 Χ Sampler Mike Murp & Date 10-10-03

20020008

Preservative None

Parameters PM10

US EPA Region 5 Field Sample

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Parameters PM10

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Preservative None Sample ID 02AH14S02

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Sampler Mile Date

10-10-02

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sTO ACTUAL PM-10 OTS

COMMENTS:

## CENTRAL REGIONAL LABORATORY

Data Checklist

Data Set <u>QIR 2002 0008 Cheshire Monitoring</u>
Metals

- Chain-of-Custody
- Analysis Request Form(s)*
- ☐ Sample Tags
- Transmittal Report w/signatures of the following:
  - Analyst (s)
  - Data Management Coordinator
- * Analysis Request Forms provide the data user a means to connect sample numbers with sampling locations

Prepared by: Jyl

ata Management Coordinator



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## **REGION 5 CENTRAL REGIONAL LABORATORY**

## 536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date:

OCT 3 1 2001

Subject:

Review of Region 5 Data for Cheshire Monitoring Study

From:

John V. Morris, Chemist

Region 5 Central Regional Laboratory

To:

Attached are the results for: Cheshire Monitoring Study

CRL data set number: 20020008

Samples analyzed for: Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel and Selenium

Results are reported for sample designations: 2002AH14S01, 2002AH14D01, 2002AH14S02 and 2002AH14S03

Data Management Coordinator and Date Re	ceived
-----------------------------------------	--------

Date Transmitted: OCT 3 1 7001

Please have the U.S. EPA Project Manager/Officer complete the Customer Satisfaction Survey, attached, or call the CRL Sample Coordinator at 3-1226.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

Received by and Date

Comments:

Date: 24 October 2001

Analyst: John V. Morris

Sample Batch Number: 20020004 & 20020008 Facility Name: Cheshire Monitoring Study

Analyte: ICP Metals

## Narrative for the Analysis of Metals in Air Filters in Batches 20020004 & 20020008

On 11 October 2001, four air filters were received at CRL for analysis for metals. These samples were collected on 4 October 2001. On 19 October 2001, four more air filters were received at CRL for analysis for metals. These samples were collected on 10 October 2001. The sample descriptions are:

Batch ID	Sample ID	Serial No.	Station ID
20020004	2002AH13S01	G1006655	GUIDING HANDS SCHOOL
	2002AH13D01	G1006687	GUIDING HANDS SCHOOL
	2002AH13S02	G1006689	RVHS
	2002AH13S03	G1006691	ADDAVILLE
20020008	2002AH14S01	G1006684	GUIDING HANDS SCHOOL
	2002AH14D01	G1006682	GUIDING HANDS SCHOOL
	2002AH14S02	G1006679	RVHS
	2002AH14S03	G1006678	ADDAVILLE

The analysis was limited to the thirteen metals listed on page 15 of the QAPP.

The samples were prepared on 22 October 2001. Method Metals_006, a hot block adaptation of the beaker digestion given in 40 CFR Part 50, Appendix G, was used for the digestion. The digestion log number was 1323. There are no holding times for the air program.

Three filter blanks were prepared, but were taken from a different box than the field samples because all of the one box had been shipped to the field. The serial numbers used in these batches do not correspond to any box of filters this analyst can find at CRL. Because we do not have blanks from this lot, the same blank subtraction criteria as for the first several batches were used. The previous blank data was used for blank subtraction, only applying blank subtraction to the elements barium, chromium, iron, magnesium and nickel. All other elements reported had filter blank results well below the detection limits of the respective analytes. For the five above named elements, the average filter blank from the measurements performed alongside earlier batches from this study and data collected on filter blanks prior to the begin of field collection, was subtracted from the measured results. This was done as described in section 11.2 of the CRL SOP Metals _006 to remove the contribution to the result from the glass fiber filter itself.

Date: 24 October 2001 Analyst: John V. Morris

Sample Batch Number: 20020004 & 20020008

Facility Name: Theshire Monitoring Study

Analyte: ICP Metals

The superang discussused for those five elements were derived from ten times the standard deviation of the data used to arrive at the average blank.

The analysis was performed on 23 October 2001 using method Metals_003, using the Perkin-Elmer 330CDV ICP. The patrium internal standard readings were somewhat more variable than with previous runs, pur well within =20%. The first instrument cheek standard. LCM1+ was out of control for several key elements, so the instrument was recalibrated, and the run restaited. Dr.y. data from the second calibration is included in the QC reports.

The first state of the control of this study, in instrument one of standards J.CML, L.CML, T. FIG. were in control. The blanks showed some out-of-control audits, but most were not of any consequence to the data. Specifically, beryllium, cadmium, cobalt, iron, magnesium, manganese, nickel and lead were either greater than or more negative than the MDL for one or both of the instrument blanks (LCB) straddling the field samples. None of this bias, if compensated for would result in a reperable concentration for beryllium, or would be more than a percent or two change for the inters, recent for the pagative response for lead on several of the instrument planks. If that were taken into account, the results for samples 2002AFI13S03 and INDINE 14800 In suit Feliabse negatives. Also, all other samples except 2002AH13831 and TO AN ISSUE OF THE RESERVE THE PERFORMANCE AND THAT HAVE A MEN THE THE STREET AS A FEW STREET. y militari i i i da ministras destris. Per tami anstar, trosse apedes mellos mellos de l'india de and the second of the control of the second destruction of the second destruction of the second second destruction of the second second destruction of the second destruction plante et al el la completa et en en premione une encompleta. L'hose dad novellet de tele ental THE REPORT OF THE PARTY OF THE 

The state of the latter within S = 1200 recovery for most of the 13 elements. The state instrument checks for these elements as a state of the state of the state instrument checks for these elements as a state of the state

The digest, that for sample 2002AH13\$01, was greater than the calibration standard for copper. This has been necessary for the past several analyses for this study, so the two-fold dilution was

Date: 24 October 2001

Analyst: John V. Morris

Sample Batch Number: 20020004 & 20020008 Facility Name: Cheshire Monitoring Study

Analyte: ICP Metals

inserted into the run as part of the normal run, and the copper data is taken from these dilutions. The dilutions of 2002AH14S01 and its duplicate were also built into the .sif file, but were not needed.

No significant spectral interference errors are indicated in the SIC measurements for these samples

Again, as with previous batches, the co-located sample pair 2002AH13S01 and 2002AH13D01, as well as the co-located sample pair 2002AH14S01 and 2002AH14D01, results are quite different. Again it appeared that the exposed portion is much darker for the S01s than for the D01s, as is consistent with the analytical results.

All analytical results files, sample information files and reformat files for ICP analysis can be found on the R5CRL data server using the following path: h:\r5crl\vol3\metals\jvmorris\20020004_8\3300dv\

The narrative, QC summary spreadsheets, sample result calculation spreadsheets and the final sample report for ICP analysis can be found on the R5CRL data server using the following path: h:\r5crl\vol3\metals\jvmorris\20020004 8\reports\

Sample Number:

Filter Blank 1

Station ID: None

Sample Batch Number: 20020004 & 8

Study: **Cheshire Monitoring Study** 

Collection Date: Analysis Date:

None 23 Oct 01 Filter SN: G6092979

Element	€0 €0	Concentration	<u>Units</u>
Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Magnesium Manganese Nickel	er W	9 U 149 0.6 U 0.6 U 3.21 1.2 U 2.4 U 57.6 6 U 550 1.2 U 1.2 U	µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter
Selenium		18 U	μg/filter

1400to1

Sample Number:

Filter Blank 2

Station ID: None

Sample Batch Number: 20020004 & 8

Study:

Collection Date:

None

Filter SN:

**Cheshire Monitoring Study** G6092978

Analysis Date:

23 Oct 01

Element	Concentration	<u>Units</u>
Arsenic	9 U	μg/filter ⁼
Barium	145	μg/filter
Beryllium	0.6 U	μg/filter
Cadmium	0.6 U	μg/filter
Chromium	3.05	μg/filter
Cobalt	1.2 U	μg/filter
Copper	2.4 U	μg/filter
Iron	54.7	μg/filter
Lead	6 U	μg/filter
Magnesium	530	μg/filter
Manganese	1.2 U	μg/filter
Nickel	⁵	μg/filter
Selenium	18 U	μg/filter

)~~ ~40dol



Sample Number:

Filter Blank 3

Station ID: None

Sample Batch Number: 20020004 & 8

Cheshire Monitoring Study Study

Collection Date:

None

Filter SN: G6092977

23 Oct 01 Analysis Date:

Element	Concentration	Units
Arsenic	9 U	μg/filter
Barium	_153	μg/filter
Beryllium	0.6 U	ug/filter
Cadmium	າ.ຣ ປ	ug/filter
Chromitim	4.32	µg/filter
Copait	∞ 1.2 U	µg/filter
Copper	2.4 U	µg/filter
ron	63,0	ug/filter
Leag	- 6 *U	ug/filter
Magnesium	555	μg/filter
Manganese	1.2 U	μg/filter
Nickel	1.2 U	μg/filter
Selenium	18 U	µg/filter

Sample Number: Sample Batch Number: 20020008

2002AH14S01

Study:

Station ID: GUIDING HANDS SCHOOL

Collection Date:

10 Oct 01

Filter SN:

**Cheshire Monitoring Study** 

Analysis Date:

23 Oct 01

G1006684

9	Element	Concentration	<u>on</u>	<u>Units</u>
	•			16114
1	Arsenic	9	U	μg/filter
١	Barium	95	U	μg/filter
I	Beryllium	0.6	U	μg/filter
(	Cadmium	0.6	U ·	μg/filter
(	Chromium	3.14	U	μg/filter
(	Cobalt	1.2	U	μg/filter
(	Copper	1030		μg/filter
-	Iron	1010		μg/filter
1	Lead	14.3	J	µg/filter
-	Magnesium	376		µg/filter
-	Manganese	31.4		µg/filter
-	Nickel	5.73	U	µg/filter
,	Selenium	18	U	μg/filter

14 octo1

Sample Number:

2002AH14D01

Study:

Station ID: GUIDING HANDS SCHOOL

Sample Batch Number: 20020008 Collection Date:

10 Oct 01

Filter SN:

**Cheshire Monitoring Study** 

Analysis Date:

23 Oct 01

G1006682

Element			Concentration	<u>on</u>	<u>Units</u>
Arsenic			9	U	μg/filter
Barium			95	U	µg/filter
Beryllium			0.6	U	μg/filter
Cadmium			0.6	U	µg/filter
Chromium			3.14	U	µg/filter
Cobalt			1.2	U	µg/filter
Copper			169		µg/filter
Iron			1040		μg/filter
Lead			7.14	J	µg/filter
Magnesium			366		µg/filter
Manganese		Y	32.2		µg/filter
Nickel		*	5.73	U	μg/filter
Selenium	d		18	U	µg/filter

nu octol

Sample Number:

2002AH14S02

Station ID: RVHS

Sample Batch Number: 20020008

Cheshire Monitoring Study

Collection Date:

10 Oct 01

Study: Filter SN: G1006679

Analysis Date:

23 Oct 01

Element	Concentrati	ion	ŭ.	<u>Units</u>
Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Magnesium Manganese Nickel	99.0 0.6 0.738 3.14 1.2 49.9 893 37.2 389 22.7 5.73	U U U		µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter
Selenium	18	U		µg/filter

Sample Number:

2002AH14S03

Station ID: ADDAVILLE

Sample Batch Number: 20020008

Cheshire Monitoring Study Study:

Collection Date:

10 Oct 01 23 Oct 01

Filter SN: G1006678

Analysis Date:

Element	Concentrati	<u>on</u>		<u>Units</u>
Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Magnesium Manganese Nickel	95 0.6 0.6 3.14 1.2 297 492 6 343 19.9 5.73	U,J U	#1 - 18	µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter µg/filter
Selenium	18	U		μg/filter

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